tenance which approaches to a smile. On all the walls, columns, ceilings, or architraves, there is nowhere a space of two feet that is not covered with some figures of human beings, animals, plants, emblems of agriculture, or of religious ceremony." Belzoni ascribes the date of its erection to the time of the first Ptolemy, who was contemporary with Alexander the Great (who died 323 B.C.); but M. Champollion asserts that the Ptolemies only rebuilt the temples which had been erected by the Pharaohs. The second temple is small, dedicated also to Isis; the third is covered like the temple at Edfou, with sculptures representing the birth of Harpocrates, the god of silence, (the same as Orus, or Horus), and the precautions taken to secure him against the attempts of his uncle Typhon.

Entering Middle Egypt we find Hermopolis, now *Eshmounein*, where is a temple dedicated to Hermes, or Mercury. To give an idea of the colossal proportions of this pile it will suffice to state that the diameter of the columns is 8 feet 10 inches, the space between them is the same, and the space between the two middle columns is 12 feet. The portico is 60 feet high, the architrave is composed of five stones, each 22 feet long, and the same number form the frieze; the single stone which remains of the cornice is 34 feet long. These details will enable us to judge of the capacity of the Egyptians to raise enormous masses, and of the magnitude of the materials employed by them. These stones are of a grès, or sandstone, as fine as marble; they have no cement between them. The shafts of the columns represent reeds, and the base the lotus plant. Denon says "the capital has nothing analogous to any other known capital, but is equivalent by its gravity in Egyptian architecture to the Doric capital in Greek architecture, and one must allow that it is richer. All the other members have their equivalent in the other orders." I may add that the columns at Hermopolis bear a close resemblance to that in Mr. Barry's sketch, and with that justify the opinion that to Egypt we must look for models of Greek architecture. Of the ancient Oxyrinchus, now *Benesech*, once the flourishing capital of a province, but now buried beneath the sands, one column alone remains, a melancholy unit standing in the midst of a desert. The sand, that scourge in the torrid regions of Africa, is every day burying beneath its terrible covering the ruins of ancient cities, and the more modern habitations which have succeeded. The temples of Egypt are very uniform in their general design and appearance. The entrance was mostly composed of two pyramidal masses, rising to a great height, with a lofty doorway filling up the space between. Behind these *pylæ* was a court containing a number of columns according to the splendour of the temple, beyond which was usually a second grand gateway like the former, but not so high; behind this was the sanctuary, sometimes as at Carnack, standing alone in the centre of a large court, or sometimes as at Philæ, situated at the end of several chambers. Obelisks, sphinxes, and other colossal forms, made the avenues to these grand edifices, which were well calculated to impress on the minds of the worshippers, who came there an awful reverence for the divinities enshrined within such wonderful fabrics.

We have now noticed nearly all the temples which can give us an idea of the architecture of the ancient Egyptians. Many besides those mentioned existed at different places along the banks of the Nile, which have disappeared, either because they are buried beneath the sand, or were removed to adorn other cities. King Amasis built many temples at Sais (which, according to Strabo, was the metropolis of Lower Egypt), in one of which was a room, dedicated to Minerva, of a *single stone* 36 feet long, 24 feet broad, and 14 feet high, which was brought by water along the Nile from the Isle of Elephanta, a distance of more than 200 leagues; it employed the labours of 2,000 men for three years. At Buthos, still nearer the sea, was carried another monolithic temple of enormous size dedicated to Latona.

Memphis, the "Noph" of Scripture (Ezek. xxx. 13), was the capital of Middle Egypt, and after the decay of Thebes, rose into splendour. Here were the ruins of a celebrated [illegible] the Persian [illegible]

Greeks, said to be built by Psammetichus, 655 B.C., in which colossal figures took the place of columns, and of another to Serapis (supposed to be the same as Osiris), which was noted for its magnificence. Few of its columns and ornaments are to be seen on the site of

"This ancient city, Memphis the renown'd,
Almost coeval with the sun himself,
And boasting strength scarce sooner to decay."
YOUNG.

The greater part were carried away to adorn the modern cities of Kairo and Alexandria, where are frequently found columns of granite of a single block adorning the halls of justice or the mosques.

Monsieur Ripaud, one of the *savans* attached to the French expedition, says, "The monuments of ancient Egyptian architecture prove that every thing was done either for their gods or their kings. Five immense palaces and thirty-four temples still remain, and the single private habitation that we can discover is discerned only through the piles of rubbish which faintly announce its plan." Diodorus Siculus (lib. I cap. iv.) speaking of Memphis, to account for the splendour of its public buildings and especially the tombs, and the comparative meanness of the houses, says, "They call the houses of the living *inns*, because they stay in them but a little while; but the sepulchres of the dead they call everlasting habitations, because they abide in them to infinite generations. Therefore they are not very curious in the building of their houses; but in beautifying their sepulchres they leave nothing undone that can be thought of."

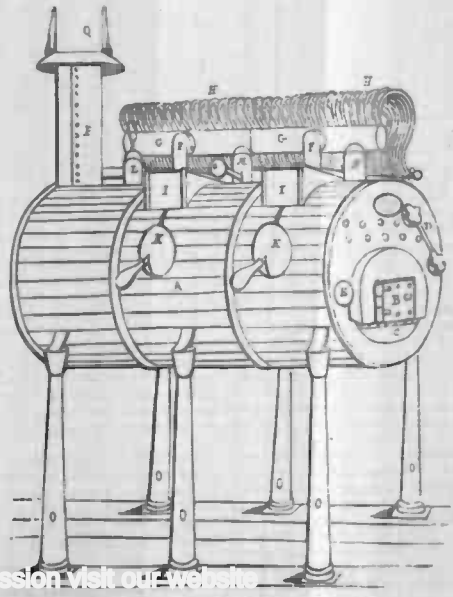
Having seen what is most worthy of notice among the palaces of the kings and temples of the divinities of this ancient people, we will consider a subject which excites not less astonishment, viz. the receptacles which they provided to receive the embalmed remains of the dead. Before we proceed to this inquiry, we will pause to gain some light as to the motives which dictated such extraordinary efforts. The ancient Egyptians believed that after a certain number of ages, they should return to life, if their bodies had not experienced any alteration in the tomb; thence arose their custom of embalming (which ceremony occupied forty days as we learn from the account of Israel being embalmed, Gen. l., 2, 3), and the great care they took to place their mummies above the inundations of the Nile. The king and his subject, the rich and poor, alike entertaining this expectation, took the same precaution for their bodies, and observed the same care in the choice of their sepulchres. The chain of the Libyan mountains is pierced, in front of Thebes, with a prodigious number of caverns, or sepulchral grottos, and wherever the ruins of an ancient city are found, there are likewise seen in the neighbouring hills, the tombs of its inhabitants; in every tomb the walls are covered with sculptures which no doubt record the history of the individual who is enclosed within. Some of these cavern-tombs are of very considerable extent, the principal are the Necropolis at Thebes, the caverns of Silsilis, those at Lycopolis,* now *Siout*, and the Grottoes of Beni-hassan.

* The Copts have a tradition that it was at this place that our Saviour and the Virgin found a refuge from Herod, and many of them retire hither to pass their last days.

ARMSTRONG'S HYDRO-ELECTRIC MACHINE.

Among the many novelties in science lately introduced to the public, this machine stands pre-eminent, pointing out, as it does, an entirely new mode of developing electricity. On a late visit to the Royal Polytechnic Institution, we were much pleased with the extraordinary effects exhibited by it, and not less with the clear and lucid manner in which it was lectured upon by Professor Bachhoffner, under whose direction it is. The singular fact of electricity being produced by the discharge of steam at a high pressure was discovered by mere accident. It appears that in 1840 some trifling defect having occurred to a stationary engine at Newcastle, the engineer became enveloped in a cloud of steam, and very much to his surprise received an electrical shock. On this coming to the knowledge of Mr. Armstrong, he immediately determined on endeavouring to ascertain the cause, and the result of his labour is the introduction in London of this really astonishing machine.

The professor, in accounting for the electrical excitation, ascribed it to the friction of the particles of water against the inner surface of the tubes, which are 46 in number, and which in the accompanying engraving will be clearly pointed out. In this view of the case Mr. Armstrong, Dr. Farraday, and other authorities concur, and there appears to be little doubt that the theory pointed out is the true one. The experiments made were of a singularly brilliant character, including those of the spangled plate, the spangled tubes, the passage of electricity through an exhausted tube, exhibiting the artificial aurora, the explosion of gunpowder, the actual ignition of wood shavings (an effect that could never be produced by electricity until done by this machine), the passage of the electric fluid along a line of matter formed of alternate pieces of pith covered with tinfoil and beads of glass, the effect of which was exceedingly beautiful, and



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